A STUDY ON THE PREVALENCE OF SMOKING AMONG RURAL MEN AGED 18 YEARS AND ABOVE AND THEIR KNOWLEDGE AND ATTITUDES ON ANTI-TOBACCO MEASURES IMPOSED UNDER 'THE CIGARETTES AND OTHER TOBACCO PRODUCTS ACT 2003' IN VADAGARAI SUBCENTER AREA

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CERTIFICATE

This is to certify that the dissertation entitled **"A study on the prevalence of smoking among rural men aged 18 years and above and their knowledge and attitudes on anti-tobacco measures imposed under 'The Cigarettes and Other Tobacco Products Act 2003' in Vadagarai Subcenter Area"** is a bonafide work carried out by **Dr.A.KALAIVANI** in the Institute of Community Medicine, Madras Medical College, Chennai – 3, under my guidance and supervision in partial fulfillment of the requirement laid down by The Tamilnadu Dr.M.G.R. Medical University, M.D. Community medicine, Branch - XV Degree examination to be held in march 2010.

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INTRODUCTION

Tobacco is the most important preventable cause of death and disease among adults. According to estimates made by the WHO, currently about 5 million people die prematurely every year in the world due to the use of tobacco, mostly cigarette smoking[1]. More important is the fact that this epidemic of disease and death caused by tobacco is increasing very rapidly.

By 2030 it is expected to kill more than 9 million people per year; half aged 35-69.[1] The epidemic is increasingly affecting developing countries, where most of the world's smokers (84% or 1 billion) live. Close to half of all men in low-income countries smoke daily and this has been increasing[2]. Many deaths and much disease could be prevented by reducing smoking prevalence.

Tobacco kills a third to a half of all those who use it. On anaverage, every user of tobacco loses 15 years of life. Total tobacco-attributable deaths from Ischaemic Heart Disease, Cerebrovascular Disease (Stroke), Chronic Obstructive Pulmonary Disease and other diseases are projected to rise from 5.4 million in 2004 to 8.3 million in 2030, almost 10% of all deaths worldwide[3]. More than 80% of these

deaths will occur in developing countries. On an average Tobacco causes one death every 6 seconds and it accounts for 1 in ten adult deaths world wide[4].

The International Classification of Diseases (ICD-10) has recognised that "tobacco dependence" is a disease[5]. Tobacco use causes a wide range of major diseases which affects nearly every organ of the body. These include several types of Cancers, Coronary Heart Disease, Cerebrovascular Disease and Lung Diseases[67]. Research has generated scientific evidence that secondhand smoke causes the same problems as direct smoking, including cardiovascular disease, lung cancer, and lung ailments such bronchitis and asthma attacks.[8,9,10,11]

WHO recommends five policies for controlling tobacco use: smoke-free environment, support programmes for those who wish to stop, health warnings on tobacco packs, ban on the advertising, promotion and sponsorship of tobacco, and higher taxation of tobacco. About half of all countries in the world implement none of these five recommended policies, despite the fact that tobacco control measures are proven and cost-effective. Moreover, not more than 5% of the world's population is fully covered by any one of these measures[12].

In India, Tobacco consumption continues to grow at 2-3% per annum[13]. The influences on tobacco smoking in India may be different from those in the West. India is the second most important tobacco consumer in the world in which smoking of conventional cigarettes accounts for only 25 percent. Most people consume tobacco in the form of non-cigarette items such as hand-rolled bidis, chewing etc. India's anti-tobacco legislation, first passed at the national level in 1975, was largely limited to health warnings and proved to be inefficient. In 2003, The Central Government passed the Cigarettes and Other Tobacco Products Act (COTPA) applicable to all tobacco products[8].

JUSTIFICATION

1. Tobacco use is a major public health problem. Tobacco is a risk factor for six out of the eight leading causes of deaths in the world[4].

2. The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India[14].

3. The tobacco consumption is more in rural than in urban areas[15].

4. "The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act 2003", which came into effect since 1st May 2004.Smoke free rules came into effect, prohibiting smoking in all public and work places from October 2, 2008. Lack of studies on awareness regarding COTPA 2003.

5. Maximum number of violations were recorded in Tamilnadu which ranks first among the states. A total of 9,648 people have been fined and a whopping Rs.11,42,950 collected as fine from the state for violating the ban on smoking in public places since October 2nd 2008. Delhi stands a distant 2nd with 3,671 people being fined for smoking in public places[16]. Public awareness of the ban on smoking in public places was very low and as a result, there were widespread violations.

OBJECTIVE

1. To study the prevalence of smoking among rural men aged 18 years and above in Vadagarai Subcenter of Naravarikuppam Block Primary Health Center.

2. To study the socio demographic factors of tobacco use among the study group.

3. To assess the knowledge and attitude of men towards anti tobacco measures imposed under cigarette and other tobacco products act 2003.

REVIEW OF LITERATURE

Operational Definition

1. **Current smoker**: Those who smoked at least one cigarette/beedi during the last 30 days prior to the survey.

2. **Past smokers (Former/ex-smoker):** Those who were not smoking for the past one months were considered as past smokers.

3. **Non smoker (Never):** All others were classified as nonsmokers[17].

4. **Pack year:** Pack year of smoking were calculated from the average number of cigarettes/beedis smoked per day, one pack year being smoking of 20 cigarettes per day for 1 year. In case of beedi smoker, the no of pack year was further divided by 4.

5. **Mainstream Smoke (MS):** The smoke drawn through the mouth piece of the cigarette when puffs are taken.

6. **Sidestream Smoke (SS):** The smoke emitted from the smoldering cigarette between puffs.

7. Secondhand Smoke (SHS): Combination of Side Stream smoke and exhaled Main Stream smoke.

8. Passive smoking: Passive smoking is the involuntary inhalation of smoke, called secondhand smoke (SHS) or environmental tobacco smoke (ETS), from tobacco products.

9. Third hand smoking: The phrase third-hand smoke was coined to identify the residual tobacco smoke contamination that remains after the cigarette is extinguished and second-hand smoke has cleared from the air.

Tobacco is used in smoking and smokeless form. Tobacco can be smoked in a wide variety of ways[18].

1. Beedis

Beedis are the most popular smoking form of tobacco in India. Thirty-four per cent of the tobacco produced in India is used for making beedis. Beedis are puffed more frequently than cigarettes to prevent them from going out. Beedis are made by rolling a dried, rectangular piece of tendu leaf with 0.15.0.25 g of sundried, flaked tobacco, which is about one-fourth of cigarette.

2. Cigarettes

Cigarette smoking is the second most popular smoking form of tobacco used in India after beedis. In India, cigarette use seems to be confined to the use of manufactured cigarettes. The prevalence varies greatly among different geographic areas and subgroups such as rural and urban.

3. Cigars

Cigars are made of air-cured, fermented tobacco, usually in factories, and are generally expensive. Cigar smoking is predominantly an urban practice.

4. Cheroots

A cheroot is a roll made from tobacco leaves.

5. Chuttas

Chuttas are coarsely prepared cheroots. They are usually the products of cottage and small-scale industries, or are made at home. Nearly 9% of the tobacco produced in India is used for making chuttas.

6. Reverse chutta smoking

The term reverse smoking is used to describe smoking while keeping the glowing end of the tobacco product inside the mouth.

7. Dhumti

Unlike beedis and chuttas, dhumtis are not available from vendors but are prepared by the smokers themselves. Dhumti is a kind of a conical cigar made by rolling tobacco leaf in the leaf of another plant.

8. Pipe

Pipe smoking is one of the oldest forms of tobacco use.

9. Hooklis

Hooklis are clay pipes commonly used in western India.

10. Chillum

Chillum smoking is an exclusively male practice; it is limited to the northern states of India, predominantly in rural areas.

11. Hookah

The hookah is an Indian water pipe in which the tobacco smoke passes through water before inhalation.

TOXICOLOGY OF TOBACCO PRODUCTS

Nearly 3000 chemical constituents have been identified in smokeless tobacco, while close to 4000 are present in tobacco smoke, many of them harmful. These include alkaloids such as nicotine,

nornicotine, cotinine, anatabin, anabasin, aliphatic hydrocarbons present in the waxy leaf coating and hundreds of isoprenoids that give the aroma to tobacco[19]. In addition, a wide range of toxic metals including mercury, lead, cadmium, chromium and other trace elements have been found in Indian tobacco[20].

Tobacco contains tobacco-specific nitrosamines (TSNAs) formed during fermentation and curing of tobacco and polycyclic aromatic hydrocarbons(PAH) which are carcinogenic. Dependency on tobacco use is related to the pharmacological effects of nicotine and related alkaloids present in tobacco leaves and tobacco smoke.

Particulate matter in tobacco smoke without its alkaloid and water content is called tar. Many carcinogens, including PAH, N-nitrosamines such as TSNAs and aromatic amines have been identified in cigarette tar[21].

Alkaloid levels were also two-fold higher in beedi tobacco fillers than in cigarette fillers. The nitrite content was two-fold higher in cigarette tobacco[22].

The toxic effects of tobacco include mutagenicity, carcinogenicity and genetic damage, as shown by various assays, cell culture studies,

animal experiments and tests on humans who either use tobacco or work in processing it[23,24].

GLOBAL SCENARIO

Tobacco is the second major cause of death in the world today. Nearly 5 million people die due to tobacco use every year and this figure will increase to 10 million tobacco attributable deaths per year by 2020.Of these, 7 million deaths will occur in the developing countries, mainly China and India[25,26]. Everyday about 80,000 to 100,000 young people initiate smoking, most of them in the developing countries[27]. Of 1000 teenagers who smoke today, 500 will eventually die of tobacco related diseases-250 in their middle age and 250 in their old age[28]. By 2010, the share of developed countries in world tobacco consumption is projected to be only 29 percent (1998: 34 percent), the share of developing countries will be 71 percent.

INDIAN SCENARIO

India is a diverse country, with marked regional variation in lifestyles and in the main causes of death[29]. Among adults, most deaths are from respiratory, vascular, or neoplastic disease or from tuberculosis; the death rates from these diseases can be increased by smoking[30].

India is one of the biggest tobacco markets in the world, ranking third in total tobacco consumption behind only the markets of China and the United States. However, the per capita consumption in the country is 0.9 kg compared to the world average of 1.8 kg[31].

Almost 182 million smokers lives in India, representing 17 percent of all consumers worldwide[32].Although 20% of total tobacco consumption in India is through cigarette smoking, bidis (handrolled cigarettes that contain unprocessed tobacco) and hookahs are alternatives, with bidi smoking accounting for 40% of total tobacco consumption.[33] Almost 40% of all diseases associated with tobacco; 50% of cancers due to tobacco.[34] The median survival of smokers was 7.5 years shorter compared to non-smokers, and the decrease in survival was also dose-dependent.[35]

RELATED STUDIES REGARDING PREVALENCE OF SMOKING

- According to NFHS-3, the prevalence of any tobacco use in 15-49 years Male- 57% and Female- 10.8%.prevalence of smoking alone was 32.7% in both urban and rural area .currently chews pan ghutka - 36.5% in males.

- A survey in South Arcot district, Tamil Nadu, among men aged 35-69 years, found that nearly 47% had ever been smokers. During

the same period, a survey in urban Chennai found that 38% men were ever-smokers.[36]

- The age-wise break-up of the National Household Survey of Drug and Alcohol Abuse in India(NHSDAA) data, showing an increase in tobacco use with age, levelling off after 50 years of age. This confirms the trend with age shown in the Sentinel Survey and local surveys[37].

- In Tamilnadu prevalence of smoking in men > 15 years men was 27%[38].

STUDIES RELATED TO MORTALITY OF TOBACCO

1. OVERALL MORTALITY :

Both men and women who used smokeless tobacco had a 20% greater risk of death than non-tobacco users (RR = 1.2). Those who smoked had a 60% greater risk of death than non-users of tobacco (RR = 1.6). When the type of smoking was analysed separately, cigarette smokers had a 36% greater risk of death and beedi smokers a 68% greater risk of death than non-users of tobacco. Those who smoked six or more beedis per day had a 75% greater risk of death (RR = 1.75) compared to non-users of tobacco. Those who smoked a fewer number of beedis per day had a 40% higher risk than non-users, demonstrating a dose - response relationship[39].

2. TOBACCO AND CANCER

The tobacco-related cancers reported by the Population-based Cancer Registries of Bangalore, Barshi (rural), Bhopal, Chennai, Delhi and Mumbai constitute 56.4% and 44.9% of cancers in males and females, respectively. The top five or six cancers in men are all tobacco-related cancers: of the lung, oral cavity, larynx, oesophagus and pharynx. In women, the leading cancer sites include those related to tobacco: cervix, oral cavity, oesophagus and lung, in addition to other cancers not considered to be tobacco related (breast and ovary)[40].

Smoking beedis, hookahs and cigarettes was associated with similarly elevated risks. In a population-based case. Control study in Bhopal, beedi and cigarette smokers had a 12-fold higher risk for lung cancer than non-smokers. A dose response relationship was observed, indicating that the more often or the longer smokers used tobacco, the greater was their risk[41]. Beedi smoking in males was a significant risk factor for cancer of all the three segments of the oesophagus, but conferred a 7-fold greater risk for the upper third (OR = 7.1) compared to that of non-smokers[42].

3. TOBACCO AND CHD

Non-smokers exposed to second-hand smoke had a 25% excess risk of CHD compared with non-smokers not exposed to smoke. There was a significant dose-response relationship[43].

In the MONICA study, the risk of myocardial infarction (MI) in men and women 35.39 years of age, for those who smoked was five times higher than the risk for those who did not smoke[44].

4. TOBACCO AND STROKE

A meta-analysis of 32 studies revealed that the overall risk of stroke increased by 1.5 times, of cerebral infarction (clotting stroke) by 1.9 times and of subarachnoid haemorrhage by 2.9 times in smokers[45].

5. SMOKING AND TUBERCULOSIS

A strong positive association between tobacco use and tuberculosis has been documented in several Indian studies. The age-adjusted relative risk of developing TB was over 2-fold among ever-smokers compared to never-smokers[46].

FRAMEWORK CONVENTION ON TOBACCO CONTROL (FCTC)

The WHO Framework Convention on Tobacco Control (WHO FCTC) is the first global health treaty negotiated under the auspices of the World Health Organization. The treaty was unanimously adopted by 192 nations at the World Health Assembly (WHA) on 21st May 2003.

The adoption of a "WHO Framework Convention on Tobacco Control" (WHO FCTC) by the World Health Assembly on 24th May 1999 is an important landmark to achieve comprehensive tobacco control worldwide[47]. India is the 7th country that has ratified the WHO FCTC on 5th February 2004. In addition, the WHO established the Tobacco Free Initiatives(TFI) in 1998. The long tem mission of TFI is to reduce prevalence of smoking and tobacco consumption in all countries. The goals of the TFI are

1. Galvanize global support for evidence based tobacco control policies and actions.

2. Build new partnerships for action and strengthen existing ones.

3. Heighten awareness of the need to address tobacco issues at all levels of society.

4. Accelerate the implementation of national , regional and global strategies.

5. Commission policy research to support rapid, sustained and innovative actions and

6. Mobilize resources to support required action.

To expand the fight against the tobacco epidemic, WHO has introduced the MPOWER package of six proven policies:

• **M**onitor tobacco use and prevention policies,

• **P**rotect people from tobacco smoke,

• **O**ffer help to quit tobacco use,

• **W**arn about the dangers of tobacco,

• **E**nforce bans on tobacco advertising, promotion and sponsorship, and

• **R**aise taxes on tobacco.

The MPOWER policy package can reverse the tobacco epidemic and prevent millions of tobacco-related deaths.[9]

WHO model of the four stages of the evolving epidemic.

- Stage 1 of the WHO paradigm is characterized by a low prevalence (below 20%) of cigarette smoking, principally limited to males,

with as yet no apparent increase in lung cancer or other chronic diseases caused by smoking.

- Stage 2 of the epidemic is characterized by increases in smoking prevalence to above 50% in men, early increases in cigarette smoking among women, a shift towards smoking initiation at younger ages, and an increasing burden of lung.
- Stage 3 of the epidemic is characterized by a marked downturn in smoking prevalence among men, a more gradual decline in women, and convergence of male and female smoking prevalence. Paradoxically, the burden of smoking attributable disease and death continues to increase.
- Stage 4 of the epidemic is characterized by a marked downturn in smoking prevalence in both men and women. Deaths attributable to smoking among men peak at 30% to 35% of all deaths (40% to 45% of deaths in middle aged men) and subsequently decline[48].

THE GOVERNMENT INITIATIVES AGAINST FROM 1970-2004[49].

- **1975:** The Cigarettes Act 1975 made a statutory health warning mandatory on all cigarette packets.

- **1980:** The central and several state governments imposed restrictions on tobacco trade and initiated efforts for comprehensive legislation for tobacco control.

- **1990:** The Central government issued a directive for prohibiting smoking in public places, banned tobacco advertising on national radio and TV and made display of statutory health warnings on chewing tobacco products mandatory.

- **1991:** The Central government directed the Central Board of Film Certificate to comply with the Cinematography Act 1952.

- **1995:** The Parliamentary Committee on Subordinate Legislation examined the existing Cigarette Act and made specific suggestions for stronger provisions. An Expert Committee on the economics of tobacco use was constituted by the Ministry of Health and Family Welfare. A coordination committee was formed by the Central Government to consider recommendations.

- **1999:** Ministry of Railways banned sale of cigarettes and bidis on railway platforms and inside trains.

- **2000:** Central Government banned tobacco advertisements on cable TV.

- **2001:** Ministry of Railways imposed ban on sale of gutka at railway stations,concourses, reservation centres and inside trains. The National Commission on Human Rights at the S.E. Asia

regional consultation meeting, advocated for tobacco control as an essential measure to protect human rights.

- **2001-03:** The states of Tamil Nadu, Kerala, Andhra Pradesh, Maharashtra, Bihar, Goa and Madhya Pradesh banned the production and sale of gutka and pan masala under the Prevention of Food Adulteration Act.[8]

PROVISIONS UNDER THE CIGARETTE AND OTHER TOBACCO PRODUCT ACT, 2003[50]

Prohibition on smoking in public places

Section 4 of Tobacco Control Act, 2003 provides;

- Smoking in all "public places" is prohibited.

- The Act of 2003 defines 'public place' as any place to which the public have access, whether as a right or not, and includes auditoria, hospital buildings, railway waiting rooms, amusement centres, restaurants, public offices, court buildings, educational institutions, libraries, public conveyances and the like which are visited by the general public but does not include any open space.Since the phrase 'but does not include any open space' may create ambiguity with respect to some places of public gathering,

the rules notified on 25 February 2004, provide a clarification with respect to the definition. This states that 'open space', as mentioned in Section 3(1) of the Act, shall not include any place visited by the public such as an open auditorium, stadium, railway station, bus stop and such other places. Thereby, such places are clearly brought into the ambit of public places where smoking of tobacco products is prohibited.

Prohibition of advertisement, promotion and sponsorship of all tobacco products.

Section 5 of Tobacco Control Act, 2003 provides;

- Both direct & indirect advertisement of tobacco products prohibited in all forms of audio, visual and print media.

- Total ban on sponsoring of any sport and cultural events by cigarette and other tobacco product companies.

Prohibition on Sale to Minors

Section 6 (a) of Tobacco Control Act, 2003 provides;

- Sale of tobacco products to persons under the age of 18 is prohibited.

Prohibition on sale of tobacco products near educational institutions

Section 6 (b) of Tobacco Control Act, 2003 provides;

- In order to restrict access of youth for tobacco products, the sale of the same is prohibited in an area within radius of 100 yards of any educational institution.

Health warnings on tobacco products packs

Section 7 of Tobacco Control Act, 2003 provides;

- All tobacco product packages to carry prominent and legible health warnings.

- The warnings will given in the same language as given on the pack.

Regulation of contents of Tobacco Products

Section 11 of Tobacco Control Act, 2003 provides;

- Nicotine and Tar contents of all tobacco product must be clearly displayed on the packs.

- Producers of tobacco products must ensure that these harmful contents are within maximum permissible limits as prescribed by the rules.

- The testing of tobacco products to measure nicotine and tar contents to be done only at Govt. recognized laboratories.

ENFORCEMENT AGENCIES

- Any police officer, not below the rank of Sub-Inspector.

- Any officer of State Food or Drug Administration.

- Any other officer, holding the equivalent rank being not below the rank of Sub-Inspector of Police.

PROVISIONS BROUGHT INTO FORCE w.e.f 1ST MAY 2004

- Prohibition of advertisements, sponsorship and promotion of tobacco products[51].

- Prohibition of sale of tobacco products to minors.

ROVISIONS BROUGHT INTO FORCE w.e.f 1st DECEMBER 2004.

- Prohibition of sale of tobacco products near Educational Institutions was brought into force from 1st December 2004[52].

PROVISIONS BROUGHT INTO FORCE AFTER 2008

- Smoke free rules came into effect, prohibiting smoking in all public and work places from October 2, 2008[53].

- All tobacco product packages to carry pictorial health warnings from 31st may 2009[54].

Amendment rules notified in 2005

- Ban on sale of tobacco products through vending machines.

- Ban on sale of tobacco products by minors.

- Restrictions on the content, size and number of point of sale of advertisements.

- Ban on visible stacking of tobacco products at the point of sale to prevent easy access to minors.

- ❑ To prevent brand sharing and surrogate advertising of tobacco products; 'indirect advertising' has been comprehensively defined.

- ❑ Ban on display of tobacco products or their use in movies or television.

- ❑ Health warning to be placed as a prominent bottom scroll in cinema and television programmes, which have been produced prior to this notification.

- ❑ Ban on display of names / logos of tobacco brands in any manner during media coverage of international events sponsored by tobacco manufacturers.

RULES FOR SPECIFIED HEALTH WARNINGS FOR TOBACCO PRODUCT PACKS NOTIFIED

The rules for specified health warnings were notified on 5th July 2006 and are as follows:

- The specified health warnings shall occupy at least fifty percent of the principal display area/s of the pack

- shall be positioned parallel to the top edge of the package and

- in the same direction as the information on the principal display area/s.

- None of the elements of the specified warning are severed, covered or hidden in any manner when the package is sealed or opened.

- No messages that directly or indirectly promote a specific tobacco brand or tobacco usage in general are inscribed on the tobacco product package.

- No product shall be sold unless the package contains the specified health warning.

- The specified warnings shall be inscribed in the language/s used on the pack.

- The minimum size of the specified health warning on each panel of the tobacco pack shall be 3.5 cm x 4 cm to ensure that the warning is legible and prominent.

- The specified health warning on tobacco packs shall be rotated every 12 months or as may be decided by the Central Government from time to time[50].

FINE / IMPRISONMENT UNDER CIGARETTES AND OTHER TOBACCO PRODUCTS ACT

SECTION	FINE/IMPRISONMENT
Section 4 prohibition of smoking in public space	Fine upto Rs 200
Section 5 – prohibition of advertisement	1st time-2 years/Rs 1000/- 2nd time- 5 years/Rs 5000/-
Section 6 – prohibition of sale to minor / educational institutions	Up to Rs 200/-
Section 7,8,9 – Labeling	Production sector 1st time-2 years/Rs 5000/- 2nd time - 5 years/Rs 10000/- Selling/ retailing 1st time-1 years/Rs 1000/- 2nd time- 2 years/Rs 3000/-

NATIONAL TOBACCO CONTROL PROGRAMME (NTCP)

The Ministry of Health and Family Welfare launched the pilot phase of the National Tobacco Control Programme in 2007-08 in 9 states of the country covering 18 districts. In 2008, it has been upscaled to 42 districts across 21 states. The main components of the NTCP[55] are:

- Setting up of State Tobacco Control Cells
- District tobacco control programme:
    - Training and capacity building of enforcement officials
    - Monitoring and implementation of tobacco control laws
    - Launching an IEC/media campaign
    - Cessation centres at district levels
    - School health and awareness programmes
- National level mass awareness campaigns
- Establishment of tobacco product testing labs
- Research and training
- Monitoring and evaluation, including Adult Tobacco Survey (ATS)
- Setting up of National Regulatory Authority (NRA).

STUDIES ON ANTI-TOBACCO MEASURES

- A ban on public smoking was associated with a reduced incidence of hospital admissions for acute MI. During the six months in which the law was enforced, the number of admissions fell significantly compared to the same period before and after the law was in effect[56].
- Combined with photos are effective in discouraging smoking and increasing Experience with pictograms in Canada and Brazil shows that large warnings public awareness of the health effects of smoking[57].
- In Ireland after going smoke free there is 83% less air pollution and 80%fewer airborne carcinogens[6].
- Comprehensive advertisement ban reduces cigarette consumption in some countries[58].
- In one study, the combined effect of people stopping smoking and reducing consumption reduced the total cigarette consumption by 29%[59].
- It has been estimated that US $ 1 investment on antitobacco would save US $ 13[6].

NO TOBACCO DAY

No Tobacco Day (31st May) activities have been a regular feature since 1988, which generally comprise of educational advertisement(s) in newspapers along with a programme/ workshop in Delhi and at other centres by states.

The theme of World No Tobacco Day 2009 is **"Tobacco Health Warnings"**, with an emphasis on the picture warnings that have been shown to be particularly effective at making people aware of the health risks of tobacco use and convincing them to quit.

ECONOMIC BURDEN OF TOBACCO

India is the world's third largest tobacco growing industry with a great impact on the economy.[60] It is the second largest country in consumption of unmanufactured tobacco as well.

Bidi manufacturing is a cottage industry in India with many children and women actively engaged in its production[61]. More than 400,000 hectares of land are harvested for tobacco and nearly 3.5 million people are estimated to be engaged in full-time tobacco manufacturing[62].

Bidis, snuff and chewing tobacco (such as gutka, khaini and zarda) form the bulk (86 per cent) of India's total tobacco production. In the rest of the world, production of cigarettes is 90 per cent of total production of tobacco related products. The returns to the farmers from tobacco cultivation are high, but the cost of production is also high and thus the relative return from the crop may not be highest for tobacco.

Tobacco economics should be studied in relation to it being a "demerit good". The total cost to the country for the year 1999 due to tobacco related disease entities was estimated at Rs.27,761 crore[63]. The cost in 2002-2003 was estimated to have risen to Rs.308.33 billion,an increment of 11% in 2 years[64]. But Bidis which is the major form of consumption account for less than 6% of Combined Excise Tax Revenues. But Cigarette which is only the next common consumption constitute almost 88% of the total tax revenues generated from tobacco[65].

The World Bank reviewed the evidence in a 1999 report and concluded that a 10% increase in the prices of tobacco products would reduce their use by about 4% in developed countries and by about 8% in developing countries[66].

METHODS AND MATERIALS

STUDY DESIGN

Descriptive Cross - Sectional Study.

STUDY AREA

Naravarikuppam Block Primary Health Center of Thiruvallur District of Tamilnadu.

STUDY POPULATION

Total population of Naravarikuppam Primary Health Center - Village Panchayat was 33,212. Among them 12,309 were men aged 18 years and above.

All men aged ≥ 18 years were the study population. Those who were non-cooperative and could not be contacted even after 3 visits were not included in the study.

STUDY PERIOD

The study was conducted between March 2009 and September 2009.

SAMPLE SIZE

According to NFHS - 3 survey prevalence of smoking among men in rural area was 35%[15].

$$N = \frac{1.96 \times 1.96 \times p \times q}{d \times d} \quad \text{So,} \quad N = \frac{1.96 \times 1.96 \times 35 \times 65}{3.5 \times 3.5} = 714$$

where d = precision value = 10 % of p, p= prevalence, q=100-p

$$d = \frac{10 \times 35}{100} = 3.5$$

So, sample size N = 714

SAMPLING UNIT

All persons aged 18 years and above in the Naravarikuppam Block Primary Health Center were taken as the sampling unit.

SAMPLING METHOD

There were 10 health subcentre in Naravarikuppam Block Primary Health Center. Out of which 6 HSC comes under town panchayat and 4 HSC comes under village panchayat.

The following were the four Village Panchayat.

1. Vadagarai
2. Surapattu
3. Theerthakarayanpattu
4. Villangadupakkam

Vadagarai Subcenter was randomly choosen by lottery method. The list of men aged 18 years and above were collected from voter list. In order to get 714 men aged 18 years and above, it was decided to survey 445 households in Vadagarai Subcenter, with a total of 1581 house holds with population of 2539 men aged 18 years and above.

$$\text{i e} \quad \left(\frac{1581}{2539} \times 714 = 445 \text{ households} \right)$$

The households were sampled by **systematic random sampling**. The sampling interval was calculated by

$$\text{Sampling interval} = \frac{\text{Total no of households(HH) in that village}}{\text{No of HH to be surveyed in each village}}$$

Sampling interval for vadagarai = 1581 / 445= 3.5

The first sample household was selected randomly (lottery method) choosing a number within the sample interval ignoring the decimal. The next household was identified by adding the sampling interval with the first randomly choosen number. In my study first randomly choosen number was 2, the first HH to be surveyed was house no 2. The second HH was 2 + 3.5=5.5 ie 5th HH ignoring the

decimal and third HH was 5 + 3.5 = 8.5 ie 8th HH. The subsequent Household was identified by same method.

DATA COLLECTION

After having sought permission from the Director of institute of community medicine, the Director of public health and informing the DDHS - Thriruvallur district , Village administrative officer , the data collection was started . The selected households were visited during morning and evening and the subjects were explained about the study. Willfull respondents were interviewed using semi-structured questionnaire.

QUESTIONNAIRE

The questionnaire for this study was developed based on Global Youth Tobacco Survey(GYTS). The act related questionnaire was designed after discussing with experts in tobacco fields. It was translated into tamil language, pretested and standardized. Part I consist of questions related to sociodemographic profile, part II consist of questions regarding usage of smoking as well as smokeless tobacco

and part III consist of questions regarding attitude and knowledge on COPTA 2003.

ANALYSIS

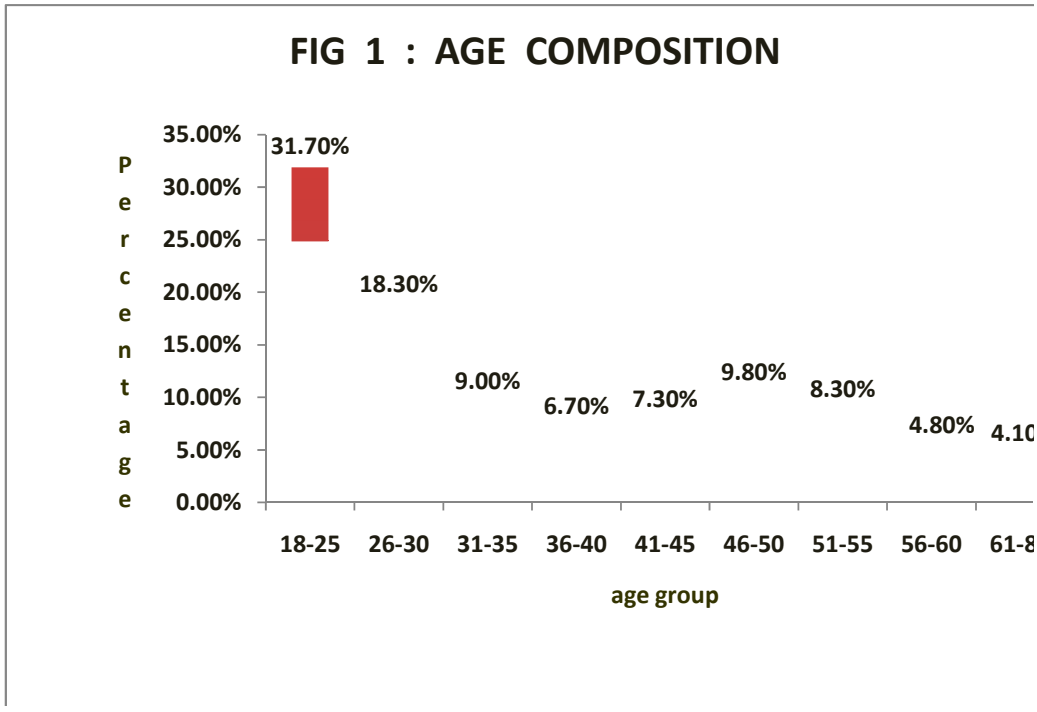
Data entry will be made in excel software in codes and analysis will be done with SPSS software. Prevalence is expressed in percentage and association with the factors will be tested for significance using chi-square test.

SECTION – A

SOCIO DEMOGRAPHIC PROFILE OF STUDY POPULATION

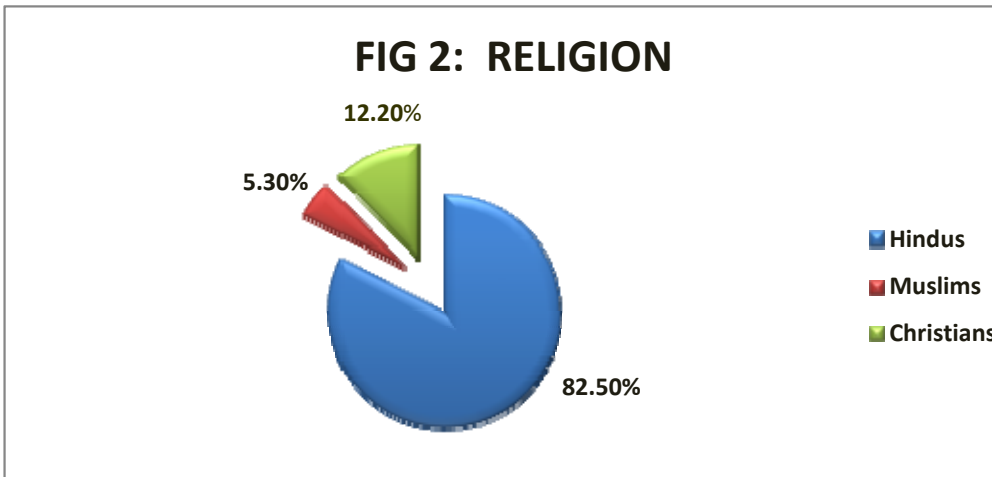
AGE GROUP

Of the 714 persons who participated in the study , 31.7% were between 18 – 25 years age group, 18.3% were between 26 -30 age group and 4.1% were above 61 years(Fig 1). Mean age group 35.34 years, range 18 – 85 years, mode 18 and standard deviation 13.98.



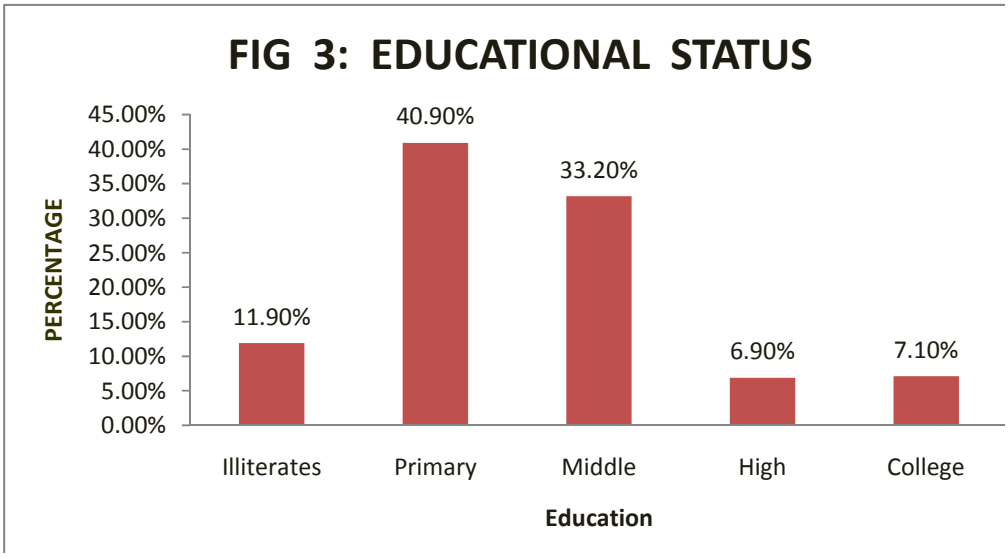
RELIGION

82.5% were Hindus , 12.2% were Christians and 5.3% were Muslims(Fig 2).



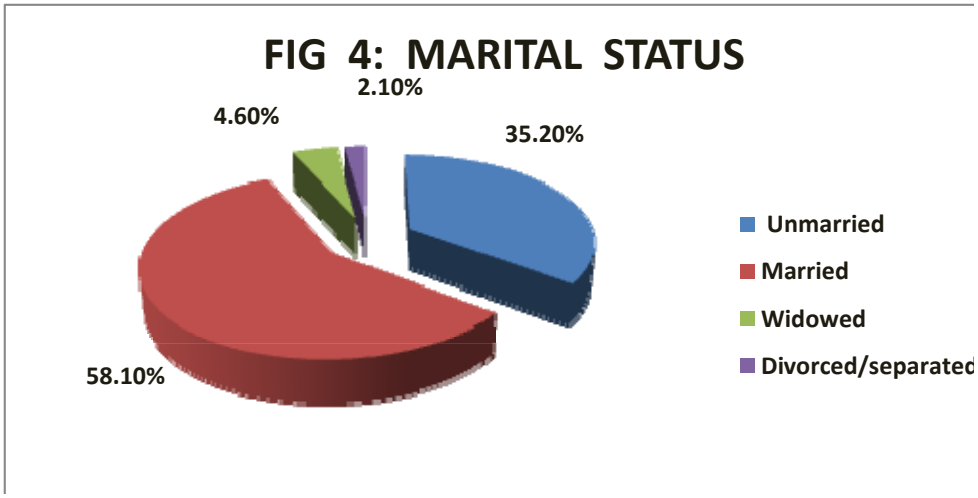
EDUCATIONAL STATUS

11.9% were found to be illiterates, 40.9% had primary school education, 33.2% had middle school education 6.9% had high school education and 7.1% had graduation(Fig 3). The combined literacy rate was found to be 88.1%.



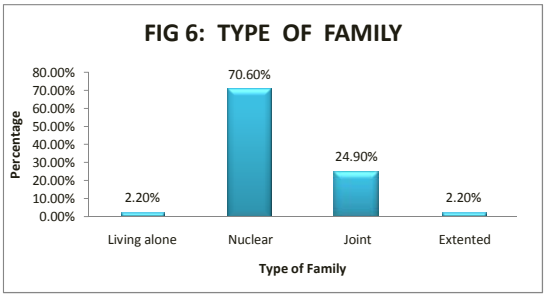
MARITAL STATUS

Analysis of marital status shows 35.2% were unmarried and 58.1% were married (Fig 4).



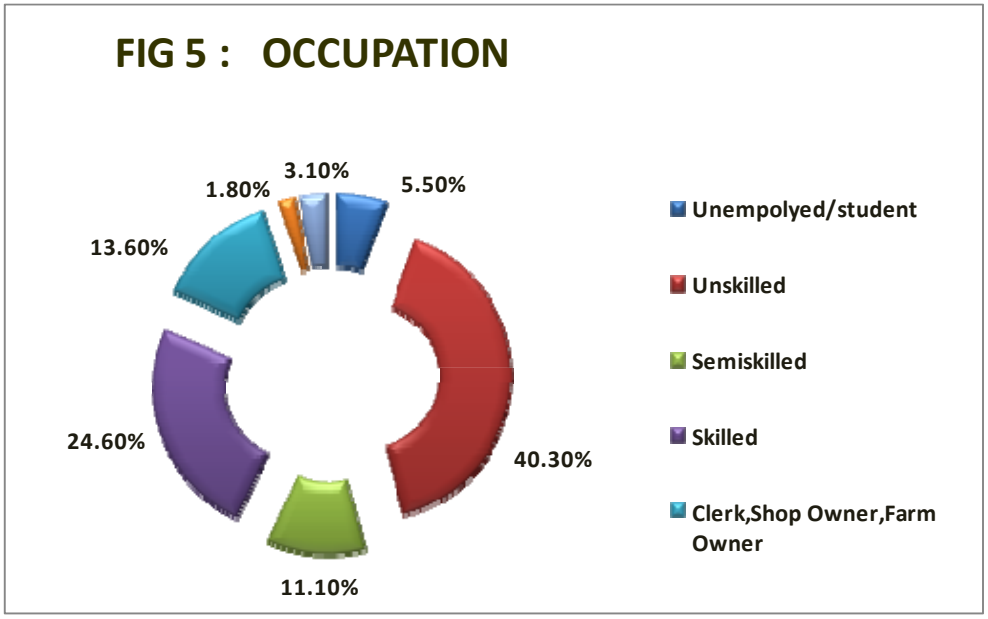
TYPE OF FAMILY

70.6% of the study group were living in nuclear family and 25% were living in joint family(Fig 6).



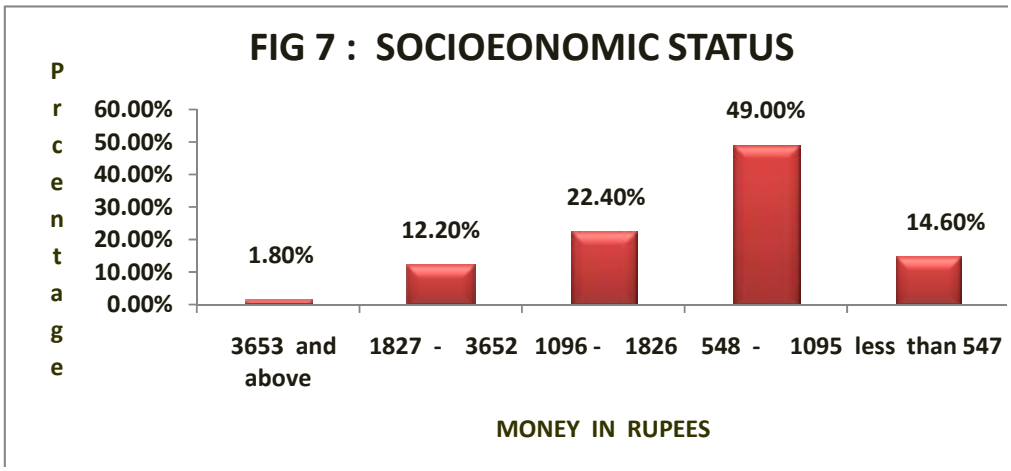
OCCUPATION

40.3% of the study group were unskilled labourers, 24.6% were skilled labourers , 5.5% were unemployed / students and 1.8% were semiprofessional/professional(Fig 5).



SOCIO-ECONOMIC STATUS

49.0% were in class IV (per capita income Rs 548- Rs 1095) and 14.6% were in class V (per capita income < Rs 547)(Fig 7).



SECTION - B

PREVALENCE OF SMOKING

TABLE - 1

PREVALENCE OF SMOKING

Category	Total No Individual N=714	Percentage
Smoker	262	36.7%
Ex-smoker	19	2.7%
Non-smoker	452	60.6%

Table 1 depicts the prevalence of smoking of men in the study population. (With 95% confidence interval = 33.2 to 40.4) 36.7% of the study group were smokers , 2.7% were ex-smoker and 60.6% were non smoker.

TABLE - 2

NO OF DAYS OF SMOKING IN THE PAST 30 DAYS

Days of smoking	No of Individuals N=262	Percentage
5	4	1.5%
10	15	5.7%
15	30	11.5%
18	1	0.4%
20	16	6.1%
25	7	2.7%
30	189	72.1%

Table 2 depicts the number of days of smoking in the past 30 days. Analysis of number of days of smoking in the past 30 days shows 72.1% of the smoker population smokes daily. Regular smokers who smoked > 25 days in the past 30 days were 74.8%(table 3).

TABLE - 3

REGULAR SMOKER

Type of smoker	No of individual N=262	Percentage
Occasional< 24 days	66	25.2%
Regular > 25 days	196	74.8%

TABLE - 4

DURATION OF SMOKING IN YEARS

Duration	No of individual N=262	Percentage
< 1 year	23	8.8%
2-10	98	37.4%
11-20	52	19.8%
21-30	47	18.0%
31-40	22	8.4%
41 and above	20	7.6%

Table 4 shows the duration of smoking .Analysis of duration of smoking shows 37.4% were smoking between 2 – 10 years.

TABLE - 5

FREQUENCY OF SMOKING PER DAY

No of cigarette/beedi	No of individuals N=262	Percentage
< or = 1	81	31.0%
2-5	53	20.2%
6-10	53	20.2%
11-20	32	12.2%
>20	43	16.4%

Analysis of number of cigarette or beedi smoked per day shows 31% smokes 1 or less than 1 cigarette/beedi per day. 16.4% smokes more than 20 cigarette/beedi per day (Table 5).

TABLE - 6

TYPE OF SMOKING

Type	No of individual N=262	Percentage
Cigarette	169	64.5%
Beedi	63	24.0%
Both	30	11.5%

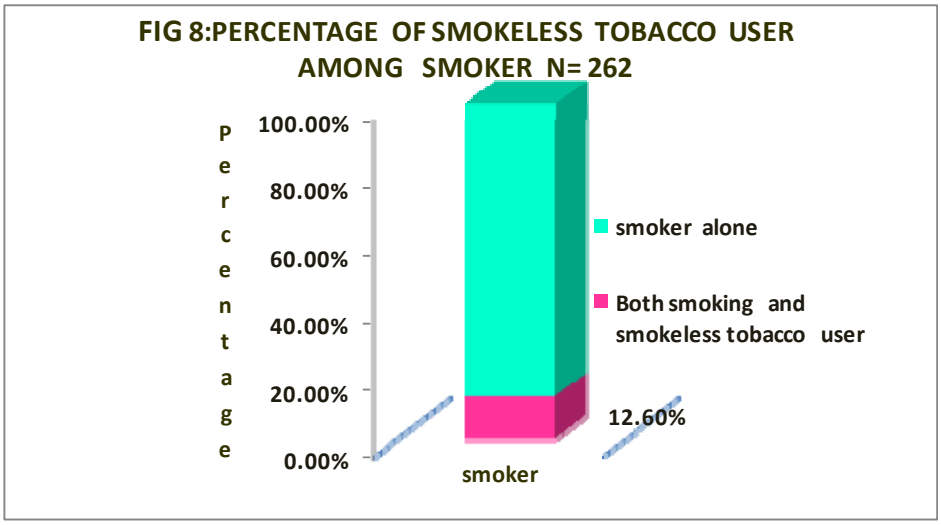
Analysis of the type of smoking shows 64.5% of the smokers use cigarette and 24.0% of the smoker uses beedi(Table 6).

TABLE - 7

PREVALENCE OF SMOKELESS TOBACCO

Other tobacco products	No of individual N=714	Percentage
No	511	71.6%
Yes	203	28.4%

In addition I enquired the study population about the smokeless tobacco usage.Analysis of the use of smokeless form of tobacco shows 28.4% of the study population (N=714) use smokeless tobacco products (Table 7).



Among the smokers, 12.6% were using smokeless tobacco (Fig.8).

SECTION- C

KNOWLEDGE AND ATTITUDE ABOUT THE ACT

Analysis of the study population shows that 96.2% were aware of the COTPA 2003 (Fig 9).

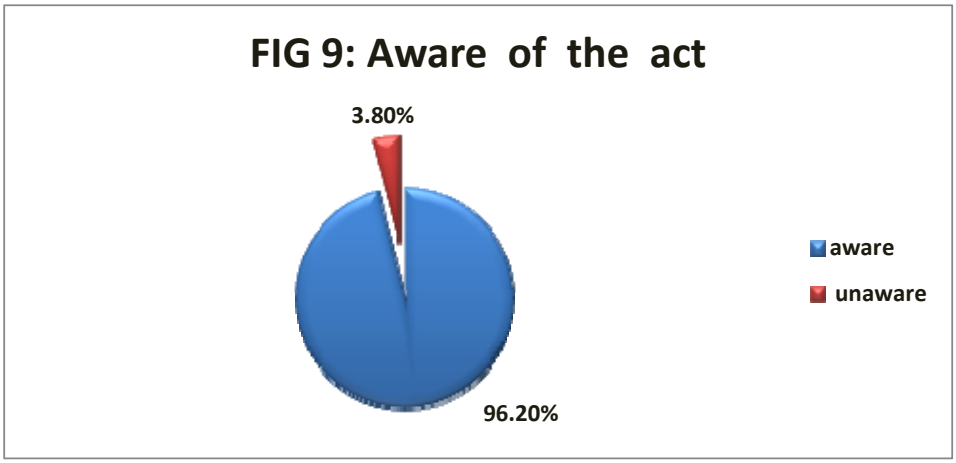


TABLE - 8

SOURCE OF INFORMATION

Source	No of Individual N=714	Percentage
News Paper	250	35.01%
Television	150	21.00%
Radio	74	10.36%
Friends	30	4.20%
A varying combination of mass media ,and friends	183	25.63%
Don't Know	27	3.80%

Source of information - 35.01% came to knew the act from newspaper , 21.00% from television , 10.36% from radio and 25.63% from varying combination of newspaper, television , radio and friends(Table 8).

TABLE - 9

AWARENESS REGARDING PROHIBITION OF SMOKING IN PUBLIC PLACE

Awareness Regarding Prohibition of smoking in public place	No of individual N=714	Percentage
Yes	687	96.2%
No	27	3.8%

TABLE 10

AWARENESS REGARDING AGE LIMIT FOR SALE OF TOBACCO

Awareness regarding Age limit for sale of tobacco	No of individual N=714	Percentage
Yes	628	88.0%
No	86	12.0%

Analysis of the study population about the awareness regarding the antitobacco measures shows that 96.2% knew that smoking was prohibited in public place(Table 9) and 88.0% knew that there was an age limit below which sale of tobacco products was banned(Table 10).

TABLE 11

ATTITUDE TOWARDS ANTI TOBACCO MEASURES – VIOLATION OF SMOKING IN PUBLIC PLACE

Attitude towards Antitobacco Measures	No of individual N=714	Percentage
Followed properly	189	26.5%
Not followed properly	455	63.7%
Don't know	70	9.8%

TABLE 12

ATTITUDE TOWARDS PICTORIAL HEALTH WARNING

Attitude towards Pictorial health warning	No of individual N=714	Percentage
Reduce the smoking habit	189	26.5%
No effect on smoking	427	59.8%
Don't know	98	13.7%

Analysis shows that 63.7% felt that the measures against smoking in public places were not followed properly (Table 11) and 59.8% felt that pictorial health warning didn't have any impact on smoking habit (Table 12).

TABLE 13

PERCENTAGE OF MEN FAVOURING THE COTPA 2003

Favouring towards COTPA 2003	No of individual N=714	Percentage
Yes	680	95.24%
No	34	4.76%

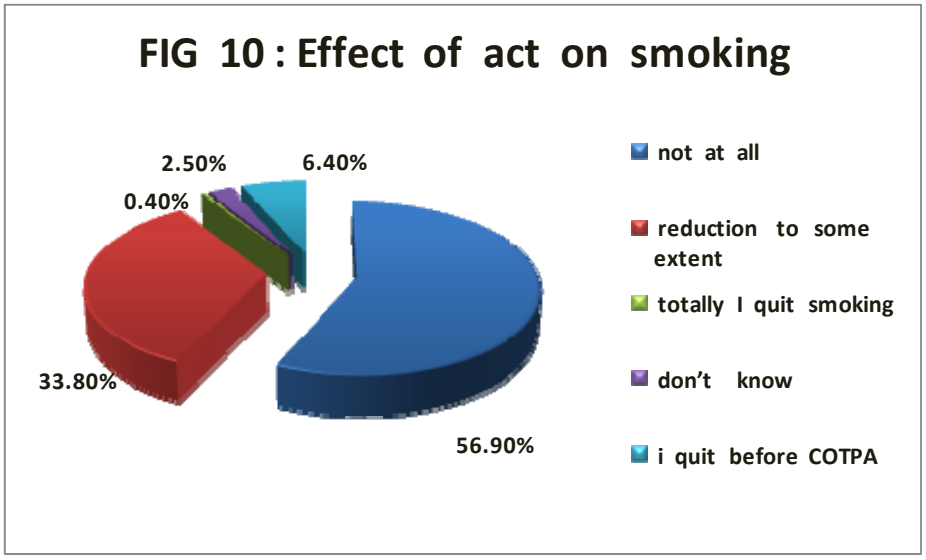
97.6% were favouring the COTPA 2003(Table 13).

TABLE 14

VIOLATION OF ACT(SMOKING IN PUBLIC PLACE)

Violation Of Act(Smoking In Public Place)	No of individual N=262	Percentage
Yes	21	8.0%
No	241	92.0%

Among the smokers (N=262) 8.0% were fined for violating the act ie smoking in public place(Table 14).



Among all smokers(n=281 current smoker and ex smoker) 33.8% told that COTPA 2003 reduced their smoking habit ,0.4% quit totally due to COTPA 2003 and 56.9% told that act didn't change their smoking pattern (Fig 10) .

SECTION - D

TABLE - 15

SMOKERS AND RELIGION

Religion	Smoker	Non Smoker
Hindu	226(38.4%)	363(61.6%)
Christian	25(28.7%)	62(71.3%)
Muslim	11(28.9%)	27(71.1%)
Total	262(36.7%)	452(63.3%)

$X^2 = 4.0661$, df = 2 p value =0.1309

38.4% of the Hindus were smokers, 28.7% of Christians were smokers and 28.9% of the Muslims were smokers. There is no significant association between religion and smoking (Table 15).

TABLE 16

SMOKER AND AGE GROUP IN YEARS

Age Group	Smoker	Nonsmoker	Total
18-25	90(39.8%)	136(60.2%)	226(31.7%)
26-30	33(25.2%)	98(74.8%)	131(18.3%)
31-35	25(39.1%)	39(60.9%)	64(9.0%)
36-40	9(18.8%)	39(81.3%)	48(6.7%)
41-45	14(26.9%)	38(73.1%)	52(7.3%)
46-50	32(45.1%)	39(54.9%)	71(9.9%)
51-55	27(45.8%)	32(54.2%)	59(8.3%)
56-60	16(47.1%)	18(52.9%)	34(4.8%)
>61	16(55.2%)	13(44.8%)	29(4.1%)
Total	262	452	714

39.8% of the age group between 18 -25 years were smokers and 55.2% of the age group above 61 years were smokers(Table 16).

TABLE 17

AGE GROUP IN YEARS AND AWARENESS OF COTPA ACT

Age Group	Awareness Of COTPA Act		Total
	Yes	No	
18-25	221(97.8%)	5(2.2%)	226
26-30	130(99.2%)	1(0.8%)	131
31-35	62(96.9%)	2(3.1%)	64
36-40	45(93.8%)	3(6.3%)	48
41-45	48(92.3%)	4(7.7%)	52
46-50	70(98.6%)	1(1.4%)	71
51-55	59(100.0%)	0(0.0%)	59
56-60	32(94.1%)	2(5.9%)	34
>61	20(69.0%)	9(31.0%)	29
Total	687(96.2%)	27(3.8%)	714

97.8% of the age group between 18 -25 years were aware of the act and 69.0% of the age group above 61 years were aware of the act. So, young people were more aware of the act than elders(Table 17).

TABLE 18

AGE GROUP AND AWARENESS REGARDING PROHIBITION OF SMOKING IN PUBLIC PLACE

Age Group	Awareness Regarding Prohibition Of Smoking In Public Place		Total
	Yes	No	
18-25	221(97.8%)	5(2.2%)	226
26-30	130(99.2%)	1(0.8%)	131
31-35	62(96.9%)	2(3.1%)	64
36-40	45(93.8%)	3(6.3%)	48
41-45	48(92.3%)	4(7.7%)	52
46-50	70(98.6%)	1(1.4%)	71
51-55	59(100.0%)	0(0.0%)	59
56-60	32(94.1%)	2(5.9%)	34
>61	20(69.0%)	9(31.0%)	29
Total	687(96.2%)	27(3.8%)	714

97.8% of the age group between 18 – 25 years were aware of prohibition of smoking in public places. 69.0% of the age group above 61 years were aware of prohibition of smoking in public places.so, young people were more aware of prohibition of smoking in public places (Table 18).

TABLE 19

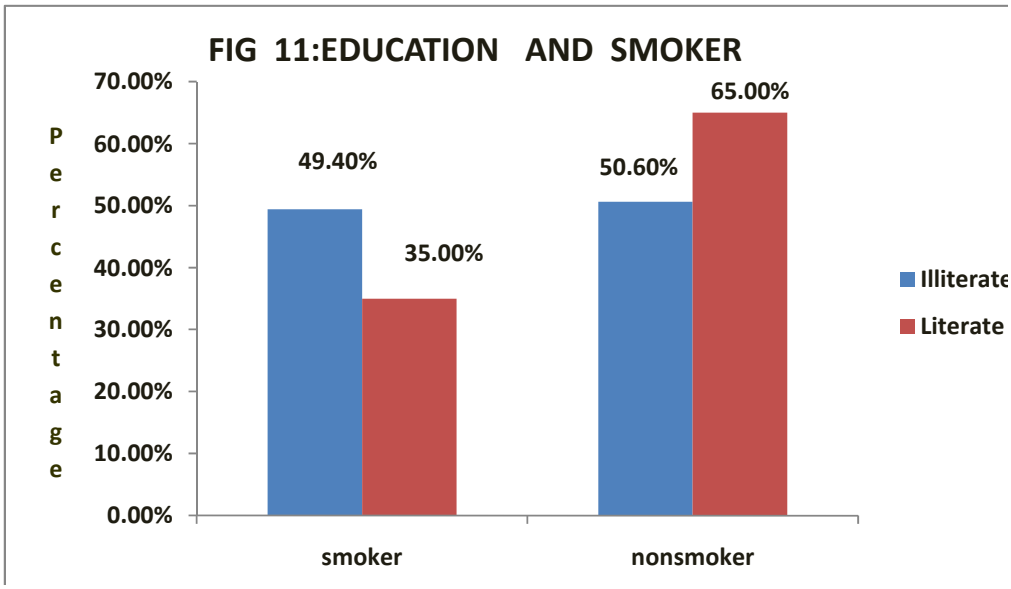
AGE GROUP AND AWARENESS REGARDING AGELIMIT FOR SALE OF TOBACCO

Age Group	Awareness Regarding Agelimit For Sale Of Tobacco		Total
	Yes	No	
18-25	208(92.0%)	18(8.0%)	226
26-30	121(92.4%)	10(7.6%)	131
31-35	54(84.4%)	10(15.6%)	64
36-40	41(85.4%)	7(14.6%)	48
41-45	44(84.6%)	8(15.4%)	52
46-50	66(93.0%)	5(7.0%)	71
51-55	49(83.1%)	10(16.9%)	59
56-60	31(91.2%)	3(8.8%)	34
>61	16(55.2%)	13(44.8%)	29
Total	630(88.2%)	84(11.8%)	714

92.0% of the age group between 18 -25 years were aware that there was age limit below which sale of tobacco products was banned. 55.2% of the age group above 61 years were aware of the age limit. so , young people were more aware of the agelimit below which sale of tobacco products was banned .

FIGURE 11

EDUCATION AND SMOKERS



OR = 1.8159 X^2 = 6.717 df = 1 p value = 0.01

Figure 11 depicts the education status and smoking. 49.4% of the illiterates were smokers and 15.7% of graduates were smokers. There is significant association between education and smoking.

Men with no formal education were 1.8 times more chances of being a smoker than those with formal education (95% CI = 1.15 to 2.86).

TABLE 19

EDUCATION STATUS AND AWARENESS OF ACT

Education	Awareness Of Act		Total
	Yes	No	
Illiterate	70(82.4%)	15(17.6%)	85
Primary school	285(97.6%)	7(2.4%)	292
Middle school	232(97.9%)	5(2.1%)	237
High school	49(100.0%)	0(0.0%)	49
College/diploma	51(100.0%)	0(0.0%)	51
Total	687(96.2%)	27(3.8%)	714

$X^2 = 52.20$ df = 4 p value <0.0001

98.1% of literate were aware of the act and 82.8% of illiterate were aware of the act. There is statistically significant association between education and awareness about the act. Literates were more aware of the act than illiterates(Table 19).

TABLE 20

EDUCATION AND AWARENESS REGARDING AGELIMIT FOR SALE OF TOBACCO

Education	Awareness Regarding Agelimit For Sale Of Tobacco		Total
	Yes	No	
Illiterate	60(70.6%)	25(29.4%)	85
Primary school	260(89.0%)	32(11.0%)	292
Middle school	215(90.7%)	22(9.3%)	237
High school	44(89.8%)	5(10.2%)	49
College/diploma	49(96.1%)	2(3.9%)	51
Total	628(88.0%)	86(12.0%)	714

X^2=29.5645 df = 4 p value <0.0001

90.3% of literates and 70.6% of illiterates were aware of age limit below which sale of tobacco products was banned. There is statistically significant association between education and awareness about the agelimit. Literates were more aware of the age limit than illiterates(Table 20).

TABLE - 21

EDUCATION AND AWARENESS REGARDING PROHIBITION OF SMOKING IN PUBLIC PLACE

Education	Awareness Regarding Prohibition Of Smoking In Public Place		Total
	Yes	No	
Illiterate	70(82.4%)	15(17.6%)	85
Primary school	285(97.6%)	7(2.4%)	292
Middle school	232(97.9%)	5(2.1%)	237
High school	49(100.0%)	0(0.0%)	49
College/diploma	51(100.0%)	0(0.0%)	51
Total	687(96.2%)	27(3.8%)	714

$X^2 = 52.20$ df = 4 p value <0.0001

98.1% of literate and 82.8% of illiterate were aware of prohibition of smoking in public places. There is statistically significant association between education and awareness about prohibition of smoking in public places. Literates were more aware of prohibition of smoking in public places(Table 21).

TABLE - 22

OCCUPATION AND SMOKER

Occupation	Smoker	Nonsmoker	Total
Unemployed/student	8(20.5%)	31(79.5%)	39
Unskilled	127(44.1%)	161(55.9%)	288
Semiskilled	33(41.8%)	46(58.2%)	79
Skilled	64(36.4%)	112(63.6%)	176
Clerk,shopowner,farmowner	21(21.6%)	76(78.4%)	97
Semiprofessional/Professional	1(7.7%)	12(92.3%)	13
Retired/old age dependent	8(36.4%)	14(63.6%)	22
Total	262(36.7%)	452(63.3%)	714

X^2=26.2353 Df =6 P <0.001

44.1% of unskilled labourers and 41.8% of semiskilled labourers were smokers(Table 22).

TABLE - 23

SOCIOECONOMIC STATUS AND SMOKER

Socioeco Status	Smoker	Nonsmoker	Total
3653 & above	6(46.2%)	7(53.8%)	13
1827-3652	26(29.9%)	61(70.1)	87
1096-1826	53(33.1%)	107(66.9%)	160
548-1095	137(39.1%)	213(60.9%)	350
<547	40(38.5%)	64(61.5%)	104
Total	262(36.7%)	452(63.3%)	714

X^2=4.1579 df = 4 p value 0.3851

46.2% of class I and 38.5% of class V socio economic status were smokers. There is statistically significant association between socio economic status and smoking(Table 23).

SOCIOECONOMIC STATUS AND BEEDI

37.5% of class V socioeconomic status were using beedi. As socio economic status increases the use of beedi decreases.

DISCUSSION

Of the study population of 714 men aged 18 years and above in Vadagarai Subcenter of Naravarikuppam Block Primary Health Center, the prevalence of smoking was 36.7% . This finding was little above the NFHS - 3 value which was 35% in rural area[15].

Among smokers, 74.8% were regular smokers who were smoking more than 25 days in a month and 28.6% were smoking more than 11 cigarettes/beedis per day. This shows the depth of the problem.

64.5% were using cigarette and 24.0% were using beedi. This was in contrast with the report that beedi was more common than cigarette in rural area[31].

28.4% were using smokeless tobacco and among smokers it was 12.6%. It was well below the national average. According to NFHS -3 reports the prevalence of smokeless tobacco in men was 36%[15].

SOCIO DEMOGRAPHIC FACTORS

Trends with Age

In my study population there was a biphasic trend in smoking pattern ie the prevalence of smoking was 39.8% between 18- 25 years, 18.8% in 36-40 years and 47.7% in 56- 60 years. According to ICMR reports, tobacco use increases with increasing age[15].

Education

There was statistically significant association between smoking and education status. Prevalence of smoking were more common in illiterates than literates. This reports was similar to the findings from NFHS-3[15]. Also it was similar to the study *BMJ* 1996;312:1576-1579 (22 June) Prevalence and patterns of smoking in Delhi: cross sectional study by K M Venkat Narayan et al[67].

Socio economic status

In my study population there was no significant association between smoking prevalence and socioeconomic status. But beedi usage were more common in lower socio economic people. Similar findings were seen in the study conducted by Ram B singh et al[68].

Occupation

Prevalence of smoking was more in unskilled and semiskilled labourers.

Knowledge and attitude towards COTPA 2003

96.2% of the study population were aware of the COTPA 2003, major source of information was newspaper (35.0%). 96.2% were aware of the prohibition of smoking in public places and 88.0% knew the age limit below which sale of tobacco products was banned.

95.24% were favouring the act, majority of the study population ie 63.7% felt that measures against smoking in public places were not followed correctly. Moreover, majority of them 59.8% felt that pictorial health warning didn't have any impact on smoking habit.

Among smokers 92.4% were aware of the act and 88.5% of smokers were favouring the ban on smoking in public places.

In addition 8.0% of smokers were fined for violating the ban on smoking in public places. Regarding quitting, 33.8% of smokers were reported that their smoking habit got reduced to some extent because of the anti-tobacco measures under the act , 0.4% reported that they had totally quit smoking because of fine due to violation but majority of them ie 56.9% reported that act didn't had any impact on their smoking habit.

SUMMARY

A cross sectional study of 714 men aged 18 years and above in Vadagarai Subcenter of Naravarikuppam Primary Health Center was carried out to identify the prevalence of smoking, socio-demographic factors, knowledge and attitude of those men towards anti-tobacco measures imposed under COTPA 2003.

The study revealed the following findings:

1. The prevalence of smoking was 36.7% and among them 74.8% were regular smokers. The prevalence of smokeless tobacco was 28.4%.
2. There was a biphasic trend in age and smoking pattern-prevalence was more among younger and older age groups. 39.8% in 18-25 years age group and 47.7% among 56- 60 years age group.
3. Smoking prevalence decreases with increase in education status – it was 49.4% in illiterates and 35.0% in literates.
4. There was no difference between the smoking status and different Socioeconomic class.
5. 96.2% of the study population were aware of the COTPA 2003 , 96.2% were aware of prohibition of smoking in public

place and 88.0% knew the age limit below which sale of tobacco products was banned.

6. 95.24% were favouring the act ,majority of the study population felt that measures against smoking in public places were not followed correctly and majority of them felt that pictorial health warning didn't have any impact on smoking habit.
7. 33.8% of smokers were reported that their smoking habit got reduced to some extent because of the act , 0.4% reported that they had totally quit smoking but majority of them ie 56.9% reported that act didn't had any impact on their smoking habit.

The study concludes that the prevalence of smoking was higher than the national average ,more common in illerates than literates. Majority of them knew and favouring the act. Among smokers, most of them felt that the act didn't had any impact on their smoking habit. Therefore, preventive steps like behavioural change communication, fiscal measures and further more strong enforcement of the act will be needed to decrease the prevalence further.

LIMITATION

1. The study was carried out only in one sub-center of a block PHC area.

2. The impact of the act could not be studied because the study was not conducted before the implementation of COTPA act 2003.

3. Since smoking was considered as a bad habit, we wont expect everyone to reveal the truth.

4. Since the study was eliciting the smoking history for the past 1 month, the possibility of recall bias cannot be ruled out.

RECOMMENDATION

The problem of tobacco in India is complex, in view of the varied nature of its use; association of a large number of sectors like health, agriculture, finance, mass media, labour, education, industry, welfare, etc. It also realized that an integrated educational, legislative and agro-economic strategy with an operational framework and political, administrative, financial & research support is needed.

Smoking is entirely preventable and the following strategies are recommended:

1. The prevalence of smoking was higher than the national average. Behavioural and lifestyle changes can be brought through education of general population. Anti-tobacco education should be made compulsory in schools and colleges. Health consequences of tobacco use must be incorporated in the school curriculum. Multimedia should be used to raise the awareness regarding the harmful effect of tobacco use among general population. It should be telecasted in doordharshan as well as private channels every day. The government should allocate adequate resources and personnel to carry out anti-smoking education.

2. Prevalence of smoking were more common in illiterates than literates and smoking prevalence increases as education decreases. Pictorial Health warnings should be printed on both sides of the Package. It should be self explanatory and rotatory every six months. Those patients affected by the consequences of smoking should be displayed on the package with their consent.

3. Most of the people buy one or two cigarettes/beedi at a time and not always in packets. So, Single cigarettes/beedi should also contain the health warning. It should also be printed in regional languages in addition to the existing practice of these being only in English. Help line number to be printed over the pack for councelling and quitting.

4. There was a biphasic trend in the prevalence among age group ie more in younger and elder age groups. So target these groups by increasing the price of the cigarette / beedi by increasing the tax. Tobacco excise taxes effectively influence consumption. But bidis and smokeless tobacco are currently taxed at very low levels to protect the poor. If bidi taxes are kept very low, further increases in tobacco taxes may lead consumers to switch to bidis. Tobacco excise taxes effectively influence consumption. Tax on bidis should be levelled at par with other

tobacco products by raising the excise duty. It would help in reducing the overall tobacco consumption as the average price of tobacco products increase and also generate more revenue for government."

5. There should be a total ban on all forms of advertisement which promote the use of tobacco even at the point of sale.

6. The government should make stringent penal provisions to effectively deal with violation of the provisions of the law. Higher officials should cross check whether the ban in public place is followed correctly. There should be toll free number for common people to inform the authorized person about the violation.

7. The government should take action in the reduction of the land for tobacco production and encouraging manufacturers and distributors to accept more safer productions and distribution.The government should conduct a study about the resources required for rehabilitating tobacco workers and the areas of alternative employment in which they could be absorbed.

8. Finally those who were tobacco dependent should be treated by behavioural and pharmacological therapies for smoking

cessation. Behavioural interventions such as physician advice, self-help materials especially individually tailored materials, psychological interventions, mass media communication campaigns, telephone quit lines/Internet-based services, quit and win competitions and smoke-free places are helpful. The pharmacologic agents that are used for smoking cessation include nicotine replacement medications and non-nicotine medications. Social support for quitting, training of health professionals and integration of smoking cessation in other health programmes are essential for successful implementation of tobacco cessation programmes.

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ABBREVIATION

WHO	-	World Health Organisation
COTPA	-	The Cigarettes and Other Tobacco Products Act
NFHS	-	National Family Health Survey
SEAR	-	South East Asian Region
PHC	-	Primary Health Centre
HSC	-	Health Sub Centre
HH	-	House Hold
RR	-	Relative Risk
OR	-	Odd Ratio
CI	-	Confidence Interval
CHD	-	Coronary Heart Disease
MI	-	Myocardial Infarction
TV	-	Television
IEC	-	Information Education Communication
US	-	United States
ICMR	-	Indian Council of Medical Research
DDHS	-	Deputy Director of Health Service
df	-	Degree of Freedom
x^2	-	Chisquare Test
SPSS	-	Statistical Package for Social Science

ANNEXURE I - QUESTIONNAIRE

PART - I SOCIO DEMOGRAPHIC DATA

Name :

Age:

1. Religion
   1) Hindu 2) Muslim 3) Christian 4) Others (specify) [ ]

2. Education 1) No formal schooling
   2) Primary school
   3) Middle school
   4) High school
   5) College [ ]

3. Occupation 1) Unempolyed/student
   2)Unskilled
   3)Semiskilled
   4)Skilled
   5)Clerk,Shop Owner,Farm Owner
   6) Semi Professional/Professional
   7)Retired / Old Age Dependent [ ]

4. Marital status: 1) Unmarried 2) Married 3) Widowed
   4) Divorced / Separated [ ]

5. Type of Family: 1) Living alone 2) Nuclear 3) Joint
   4) Extented [ ]

6. Monthly income of the family : [ ]

Total number of family members : [ ]

Monthly per capita income : [ ]

7. Socio economic status: (Modified B.G.Prasad' classification annexure II)

1) Rs 3653 and above
2) Rs 1827 - Rs 3652
3) Rs 1096 - Rs 1826
4) Rs 548 - Rs 1095
5) less than Rs 547

PART II SMOKING/ SMOKELESS TOBACCO USAGE

8. Are you a current smoker ?

1) Yes
2) No

If yes go to 10 th question , if no go to 9 and then 14 th question

9. Are you an ex- smoker ?

1) Yes
2) No

10. How long you are smoking?

11.During the past 30 days ,on how many days did you smoke cigarettes/beedis or any other form of smoking ?

12.During the past 30 days , on the days you smoked, how many cigarettes/beedis or any other form of smoking did you usually smoke?

1) Less than or equal to 1 cigarette/beedis per day
2) 2 to 5 cigarettes/beedis per day
3) 6 to 10 cigarettes/beedis per day
4) 11 to 20 cigarettes/beedis per day
5) More than 20 cigarettes/beedis per day

13.During the past 30 days , what type of cigarettes/beedis or any other form of smoking did you usually smoke?

1) Filters
2) Beedis
3) Both
4) Others(cigars etc)

14.During the past 30 days , have you ever used any form of tobacco products other than cigarettes / beedis or any other form of smoking ?

1) I didn't use other form of tobacco products.
2) Chewing tobacco
3) Snuff
4) Paan masala
5) Ghutka
6) Others

PART III KNOWLEDGE AND ATTITUDE TOWARDS COTPA 2003

15.Do you know act regarding tobacco?

1) Yes
2) No

16. From what source you came to know about it?

1) News Paper
2) Television
3) Radio
4) Friends
5) A varying combination of mass media and friends
6) Don't know

17.Are you in favour of this act?

1) yes
2) No

18. whether smoking is prohibited in public place or not?

1) Yes
2) No

19. Do you know any age limit below which sale of tobacco products is not permitted under COTPA?

1) Yes
2) No

20. Do you think measures against smoking is followed properly everywhere?

1) yes
2) No
3) Don't know

21.Do you think pictorial health warning over cigarette/beedi package reduce the habit of smoking?

1) Yes
2) No
3) don't know

If smoker or ex-smoker,

22.Have you ever been charged for violation of COTPA,2003?

1)Yes
2)No

23.Overall do you think this act has changed your smoking habit?

1) Not at all
2) Reduction to some extent
3) Totally I quit smoking
4) Don't know
5) I quit before the commencement of COTPA

ANNEXURE - II

SOCIOECONOMIC CLASS- MODIFIED B.G. PRASAD'SCLASSIFICATION

The calculation as per Modified Prasad's classification has to be done as follows

calculation of correction factor(CF) :

July 2009 AICPI(All India Consumer Price Index) value = 741

So, CF = AICPI X 0.0493

= 741X 0.0493 = 36.53 So , CF = 36.53

The calculation as per Modified Prasad's classification was done using the following formula:

=per capita monthly income of 1961 as suggested by BG Prasad X Correction Factor

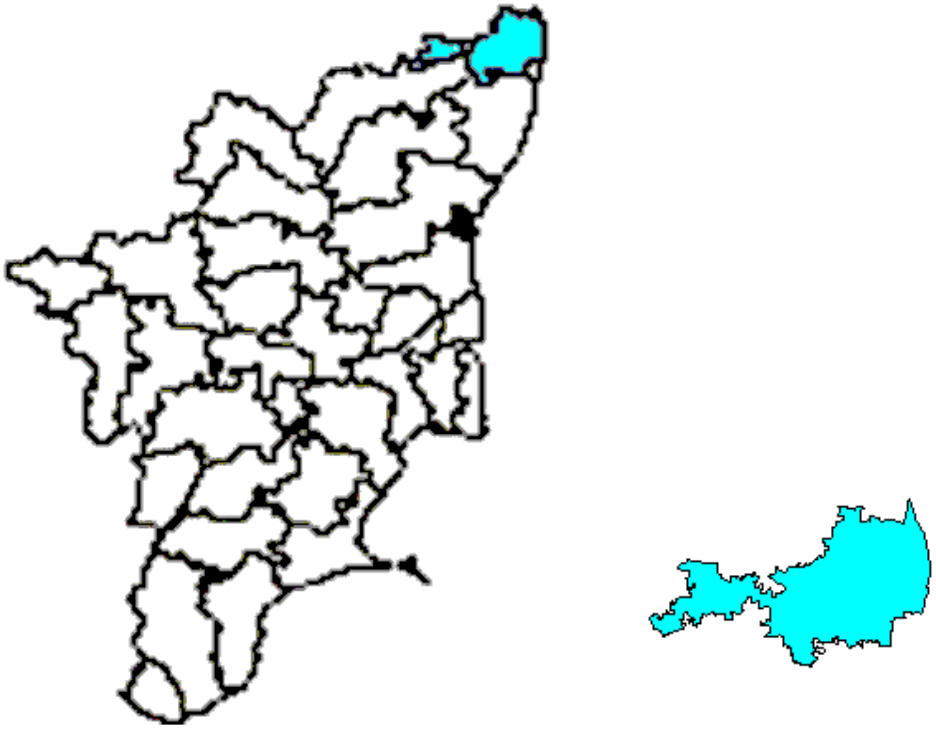
per capita monthly income of 1961 for socio economic class I - Rs 100
and above , class II - Rs 99 to 50 , class III - Rs 49 to 30 , class IV - Rs 29 to 15 , class V - below Rs 15.

So class I = 100 X 36.53 = Rs 3653 and above , class II 50 X 36.53 = 1827 and 99 X 36.53 = 3652 So , between Rs 1827 and Rs 3652 and so on.

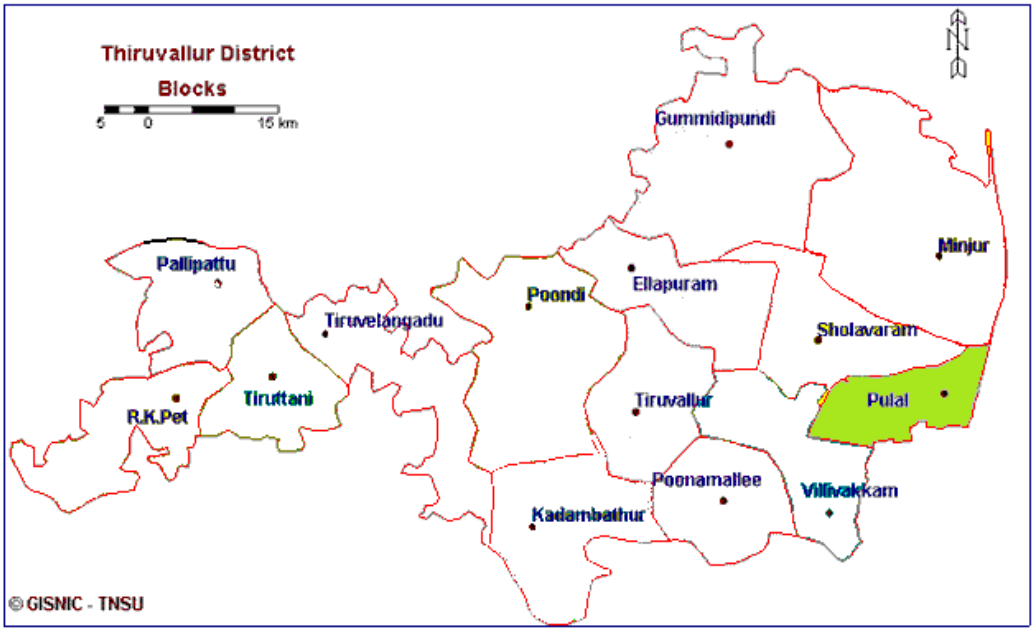
Class	Per capita Income
Class I	Rs.3653 & above
Class II	Rs.1827- Rs.3652
Class III	Rs.1096- Rs.1826
Class IV	Rs.548- Rs.1095
Class V	Below Rs.547

ANNEXURE - III

TAMILNADU MAP WITH THIRUVALLUR DISTRICT



Puzhal block



VADAGARAI SUBCENTER - AREA MAP